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EDITORIAL

of Mathematics and for *Historia Mathematica*

In a symbolic way the current year at the turn of the millennium invites us to evaluate the past and glance ahead toward the future. This applies in particular to mathematics, the oldest among the sciences, and to its history. Although, as a professional discipline, history of mathematics has a long tradition which may be traced back centuries, it has experienced rapid growth in the past few decades. Historical studies have evolved in a range of directions which reflect the complexity of the mathematical enterprise. Looking at the richness and variety of scientific production in this field, one realizes that various styles and points of view are necessary in doing historical research. Discovery of sources, publication of documents and correspondence, editing of collected works of great mathematicians, history of a particular mathematical idea or theory, rational reconstructions, biography, bibliography, local history, social history, and so forth, all contribute to an historical understanding of mathematics. Each has its own method and scope and involves (often implicit) philosophical conceptions and issues. Thus, instead of one history of mathematics, at first glance it seems perhaps more appropriate to the current state of research to speak of many histories of mathematics, conceptually unified by having mathematics in its various aspects as their common object of concern.

However, in spite of this variety of approaches and styles, there is an element which seems to characterize contemporary research in the history of mathematics and which relates it to issues pursued by the modern history of science. This is provided by the project of critical understanding and interpretation of the primary sources, a project which stands apart from the documentary and descriptive approach which characterized the historical work of older generations. For quite a long time, indeed, the main aim of historians of mathematics had been to describe the content of books and papers, theorems and theories in the most neutral and objective manner possible. This approach was modeled on Boncompagni's celebrated *Bullettino di bibliografia e storia delle scienze matematiche* (1868–1887), which provided the history of mathematics with the standards of a rigorous discipline by paying tremendous attention to primary sources and to the production of an erudite editorial apparatus. This was thought to be sufficient to allow the historian to discover the ultimate truth of facts. The same aim was shared by a number of great historians who at the turn of the century made the history of mathematics an academic, well established mathematical discipline.

Because of the apparently cumulative character of mathematics, the older generation of researchers mainly conceived of history as an increasing collection of scientific achievements through the ages. Their leading philosophy was an implicit (or sometimes explicit) form of continuism, i.e., a belief in the uninterrupted development of mathematical science from antiquity to present times. Accordingly, historians focused on the search for unpublished documents and sources in the hope of filling in the gaps in our knowledge of the past.

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This attitude dominated research in the field until recent decades. To be sure, the search for sources and careful attention to documents in order to make past texts accessible to modern readers are essential parts of any historical investigation. All the more, sticking to the texts is the preliminary step for any further historical work and indeed the basis of any serious professional research.

However, modern methodological criticism has shown that things are more complex. On the one hand, striving for a neutral, documented objectivity appears to be a hopeless task. The historical narrative cannot be reduced to a dull picture of the past. The historian is by no means a mere modern chronicler of events which are possibly very distant in time. Nor does his or her activity consist in the registration of facts and documents with notarial scruple and attitude. This is why merely documentational historical work—however important it may be—leaves in the reader a sense of dissatisfaction. On the other hand, reading the works of past mathematicians with the lenses provided by modern mathematical knowledge raises delicate and difficult questions: How should the historian give an account of past mathematical results and theories? What should be his or her appropriate mathematical language? May (or even should) he or she ignore subsequent mathematical developments in order to better appreciate the scientific achievements under examination, or instead, does more recent mathematical knowledge play an essential role in the historical understanding of past authors and results? Mathematical language is not indifferent to the content which it expresses. On the contrary, it is loaded with theoretical meanings which cannot be tacitly assumed out of their context. For this reason, when translated into modern language, past theorems and theories risk appearing sometimes surprisingly modern, sometimes incomprehensible, and sometimes simply trivial.

Mathematics as a discipline has developed in broad scientific, cultural, and social contexts which need to be taken into account by historians. This attitude provides a more comprehensive understanding of the past, thus making obsolete the division between internalistic and externalistic history of mathematics which became established in the 1950s. In the last decades the interest in understanding the development of mathematics in a broad context has led to study such issues as the formation of mathematical schools, the professionalization of research, and the role of the larger social and cultural milieu in which mathematics has developed. What makes the historian's work a difficult and fascinating task is the tireless search for an (often unstable) point of equilibrium between the mere presentation to modern reader of texts and sources of the past and their critical interpretation with theoretical tools provided by both contemporary mathematics and the methodology of historical research.

Historia Mathematica aims to meet the challenges which the modern history of mathematics poses by: Promoting the growth and development of the field through the communication of scholarly high-quality research of the international community, and by trying to reach and interest a broader and truly international readership. This includes professional historians of mathematics, historically minded mathematicians, historians and philosophers of science and mathematics, specialists in mathematical education, and amateurs—in short, all scholars and educated persons who find in the history of mathematics a help in their professional work or who simply enjoy knowing more about the history of the subject.

For a number of reasons, including strong economic and political factors, English has in the past 50 years become more and more the dominant international language. This holds true in particular for communication in science, including the history of mathematics. But

important as it may be, a common language for communication is merely a tool which is far from providing a substantial unification in the discipline. In the course of its history mathematics has been written in many different languages. It is a matter of fact that professional historians of mathematics need a linguistic expertise for their scholarly work, which should be reflected in the pages of a genuinely international journal, such as *Historia Mathematica*. This journal aims to promote and represent the history of mathematics as an international enterprise pursued all over the world. For this reason we shall place particular emphasis on reviews of books published in various countries and languages.

In assuming the editorship of *Historia Mathematica* we offer our thanks to a number of people who in the course of the past 25 years have contributed to giving this journal its outstanding position in the field. We thank all of the previous editors and in particular the outgoing editors Karen Hunger Parshall, who served from 1994 to 1996 as Managing Editor and from 1996 as Editor, and Jan P. Hogendijk, Managing Editor of this journal since 1996. Both Karen and Jan have kindly agreed to continue to serve as Associate Editors. We extend our thanks to Paul R. Wolfson, who served from 1996 as the Book Review Editor for books written in English, and to Thomas Archibald, who is taking over this position. We are pleased to announce that Catherine Goldstein will continue as the Book Review Editor for books written in languages other than English. We thank David E. Zitarelli, who for over 10 years has done invaluable work as Abstracts Editor, and we welcome Glen van Brummelen to this position. Finally, we extend our thanks to outgoing and present members of *Historia Mathematica*'s Editorial Board and the International Commission on the History of Mathematics and its Executive Committee. We are confident that their continued support will help us make *Historia Mathematica* an increasingly interesting, high-quality journal and help us maintain scholarly standards in the field.

As is its tradition, *Historia Mathematica* welcomes articles in a wide spectrum of historical research. On this occasion we call attention to a change in reference style, which will return to the citation of sources by name and date according to the usual practice followed in historical works. Prospective authors are referred to the revised Information for Authors for details.

In our goal of attracting increasing interest in the history of mathematics at the outset of our editorship, we join mathematicians in celebrating the current year 2000, named by UNESCO the Year of Mathematics. In particular, we hope that *Historia Mathematica* will attract young scholars whose work should surely provide fresh ideas and new enthusiasm in facing the challenges which the future of our discipline will hold.

Umberto Bottazzini
Craig Fraser
Editors